Nanolubricants for diesel engines: related emissions and compatibility with the after-treatment catalysts

Authors
SJ Castillo Marcano, S Bensaid, FA Deorsola, N Russo, D Fino

Publication date
2014/4/1

Journal
Tribology International

Volume
72

Pages
198-207

Publisher
Elsevier

Description
The effect of the lubricant oil additivated with MoS_2 nanopowders was assessed through a set of full-scale tests on a real diesel engine – several engine points and cooling water temperatures were investigated for both a reference oil and a MoS_2-additivated one. The emission abetment efficiency of the DOC and DPF reduces the gas and solid pollutants obtained with the MoS_2-additivated oil to levels equivalent to the ones reached with the reference oil. An endurance test of 100 h (equivalent to 10,000 km) proved the stability of the catalytic system and the suitability of commercial after-treatment catalysts to cope with the emission modifications induced by the inclusion of nanoadditives in the oil matrix.